Helping People Make Healthy Lifestyle Changes: What Works, Why?

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Presenters Disclosures*

- Food and nutrition clients:
  - McNeil Nutritional, LLC (Splenda® Brand Sweeteners)
  - Beneo Institute (dietary fibers)
- Diabetes clients:
  - Insulet Corporation
  - Locemia Solutions, ULC
- Online weight management coaching:
  - DPS Health

*As of 10/14

Program Goals

1. Detail clinical impact of weight loss/maintenance to prevent/delay progression preD, T2D with recent research evidence.
2. Identify factors for successful weight loss/maintenance from recent research evidence.
3. Through dialog with successful “losers” and HCP counselors/coaches challenge and/or reinforce HCP strategies, tools, and techniques to support clients’ weight management efforts.
<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
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<tbody>
<tr>
<td>10:00 – 11:00 am</td>
<td>Presentation</td>
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<tr>
<td>11:00 – 11:45 am</td>
<td>Panel discussion</td>
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<tr>
<td>11:45 am - noon</td>
<td>Q &amp; A and recap</td>
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BIG Applause to Montana!
**Diabetes Prevention Program**
**Delivery in Montana**
- Adapted in 2008 for group-based implementation and telehealth delivery to rural/frontier areas.
- Enrolled over 5,300 participants since 2008.
- Reimbursed by MT Medicaid in 2012 for Medicaid beneficiaries.

**Table.** Outcomes at 4 months among participants in the Montana Diabetes Prevention Program, 2008–2013.

<table>
<thead>
<tr>
<th>All participants, 2008–2012</th>
<th>Medicaid only, 2012–2013</th>
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<tbody>
<tr>
<td><strong>Mean (SD)</strong></td>
<td><strong>Mean (SD)</strong></td>
</tr>
<tr>
<td>Age (years)</td>
<td>52.5 (11.9)</td>
</tr>
<tr>
<td>Baseline BMI (kg/m²)</td>
<td>36.2 (7.2)</td>
</tr>
<tr>
<td>Number of core sessions</td>
<td>13.7 (3.8)</td>
</tr>
<tr>
<td>Weight change (kg)</td>
<td>2.3 (2.1)</td>
</tr>
<tr>
<td>Sex (female)</td>
<td>82 (3,119)</td>
</tr>
<tr>
<td>Achieved ≥14 weeks self-monitoring fat intake</td>
<td>16 (546)</td>
</tr>
<tr>
<td>Achieved 150 min physical activity per week</td>
<td>64 (2,072)</td>
</tr>
<tr>
<td>Achieved 7% weight loss</td>
<td>34 (1,300)</td>
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**Data Source:** Diabetes Prevention Program, Montana, 2008–2013.

**Data Notes:** Enrolled defined as attending at least one visit. Completed program defined as attending at least 4 core and 3 post-core visits.

**Prediabetes to Type 2 = Progressive**

![Natural History of Type 2 Diabetes](image)

**Overweight Begets, Prediabetes & T2D**

- Diabetes (US):
  - 29 mil (9%) (21 mil dx)
  - ~6% T2
  - ~85% T2 overweight
- Future glimpse
  - 40% of population, 2 out of 5 to develop in lifetime

Overweight Begets, Prediabetes & T2D

- Prediabetes (US)
  - 86 mil$, majority overweight
  - 37% of adults >20 yr 51% over 65 yrs$
  - Only 11% aware (from 8%$
- Progression PreD to T2D:
  - 70% will develop T2$
  - Annually 11% preD not engaged in healthy lifestyle develop T2D following 3 yrs$


Detail clinical impact of weight loss/maintenance to prevent/delay progression preD, T2D with recent research evidence.

Natural History: Wt Gain, Loss, Regain

Eckel RH et al: Obesity and type 2 diabetes: What can be unified and what needs to be individualized? Diabetes Care 34:1424-1430, 2011
Diabetes Prevention Program (DPP): Trial Basics

- DPP initiated: 1998, stopped 2001
- RCT, multi-site in U.S.
  - ~3000 subjects
- 4 arms to 3 arms: metformin w/ std care, placebo/std care, Intensive Lifestyle Intervention (ILI)
- Wt loss: 5 – 7% from initial
- Exercise: 150 min; 30 min, 5x/wk
- DPP Outcomes Study (DPPOS) extension, ongoing:
  Does further reduction in diabetes development reduce complications?


DPP/DPPOS Results to Date – Reduction of Incidence of T2D in High Risk Population

<table>
<thead>
<tr>
<th></th>
<th>ILI*</th>
<th>Metformin/Std Care*</th>
</tr>
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<tbody>
<tr>
<td>DPP1</td>
<td>58%</td>
<td>31%</td>
</tr>
<tr>
<td>DPPOS at 10 yrs2</td>
<td>34%</td>
<td>18%</td>
</tr>
<tr>
<td>DPPOS at 15 yrs3</td>
<td>27%</td>
<td>17%</td>
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*Compared to placebo/care. All DPP participants offered lifestyle intervention post DPP leading to reduction in differences over time.


DPP Lifestyle Changes:

Weight Loss or Physical Activity?

- DPP Findings:
  - Weight loss = dominant predictor of reduced T2 incidence and return to normoglycemia
  - For each kg weight loss = 16% reduction in risk for T2
  - Subjects who lost > 5 – 7% reduced T2 risk > 90%
  - Physical activity helps sustains weight loss – plays “supporting role”

DPPOS – 15 yr F/U

• Conclusions:
  – Can prevent/delay T2D with ILI or metformin over long term
  – Regardless of DPP treatment type, participants w/ out T2D at 15 yrs had 28% lower occurrence of microvascular disease
  – Minimal incidence of CVD (HA, stroke) (young, healthy population)
  – HTN improved in ILI, less in metformin DPP group
  – Metformin: DPPOS largest, longest trial using drug, safe and well-tolerated, small increase in B-12 deficiency

• Summary: Weight loss key factor in preventing progression of prediabetes to type 2 and in restoring normoglycemia to some.

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Look AHEAD Trial

• Study details:
  – Long term (start ~2000), multicenter, RCT, study extended to 2014 (ended early 10/19/12)
  – > 5,137 (55-76 yrs), overweight or obese individuals
  – T2 diabetes for 6.8 + 6.5 yrs (range 3 mos – 13 yrs)
  – Median follow up 9.6 yrs

• Primary Outcome:
  – Will intentional weight loss reduce the incidence of fatal and nonfatal cardiovascular and cerebrovascular events?

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Look AHEAD Trial – Groups Defined

• Intensive Lifestyle Intervention (ILI): 
  – Goals: 7% or greater wt loss at one year, >175 minutes physical activity/week
  – Calorie goal: 1200-1800 cal/ day, < 30% of cal as fat, (~10% sat fat), minimum 15% cal as protein, use portion-controlled meals and meal replacements
  – Support:
    • 0 – 6 mos: weekly (group and individual)
    • 6 mos – 1 yr: 3x/mos (group and individual)
    • Remainder of trial: regular with decreasing frequency

• Diabetes Support and Education (DSE) (control):
  – Support: invite 3 group sessions/yr (not mixed)
  – Standardized protocol for eating plan, physical activity, social support.
  – No focus on behavioral strategies

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Look AHEAD: Changes in Weight

- Mean wt loss from baseline 6% ILI, 3.5% control

Look AHEAD – Positive Results, Despite Headlines

- Median follow up 9.6 yrs
- Mean wt loss from baseline 6% ILI, 3.5% control
- A1c lowering ILI group 0.2%
- Primary outcome: Failed to reduce CVD events in ILI vs. control
- Other health benefits:
  - Reduced sleep apnea, depression, urinary incontinence and improved QOL
  - Subjects with early stage disease = most health benefits
  - Shortest duration
  - Not on insulin
  - Good baseline glycemic control

Financial analysis:
- ILI produced mean relative per-person 10-year healthcare cost savings of $5,280; not evident in ppl w/ hx of CVD
- Average annual savings ~$600/participant
- ILI used fewer medications (7%), had fewer hospitalizations (11%)

Look AHEAD continues as observational trial
Weight Loss Matters Most – When?

But Healthy Eating is continuously important and can always assist glucose, BP, lipid control!

ADA 2013 - Optimal Macronutrient Mix?\(^1,2\)

- No one ideal % calories from carb, pro and fat for all
- No optimal mix to achieve wt loss
- Wide variety of eating patterns shown modestly effective; all acceptable to achieve positive metabolic outcomes
- Base mix around healthy eating goals, personal habits and metabolic goals

POUNDS LOST Study

- Study details:
  - NIH - 2 yr wt loss trial, 800+ subjects, 2 sites
  - Overwt adults, BMI: 25 - 40
  - 4 diets, varying % calories:
    - CHO - Low 35% to high of 65%

Results:
- No one nutrient composition faired better than another (subjects modified towards diet goal, but didn’t reach diet’s goal)
- Weight loss:
  - 6 months: similar weight loss - 7% (6 kg/13 lbs)
  - 12 months: regained similar amounts of weight
  - 2 years weight loss remained similar: 4 kg/9 lbs
  - Subjects attending 2/3rd of sessions lost: 9 kg/20 lbs
- Clinical improvements:
  - Reduced cardiovascular disease and type 2 diabetes risk factors including lower LDL-cholesterol, BG and serum insulin levels; and slightly lower BP

ADA 2013 – Weight Management

- Modest weight loss >6 kg (7-8.5%) may provide metabolic benefits (for some), esp early in disease
- Regular physical activity, and frequent contact with RDs (counseling/support) necessary for consistent, long term beneficial effects
- Reframe “success”:
  - Minimize weight regain, maintain maximum of lost weight
  - Prevent further weight gain, slow trajectory
Guidelines for the Management of Overweight and Obesity in Adults\(^1\)

- Jointly published 2013: American Heart Association (AHA), American College of Cardiology (ACC), The Obesity Society (TOS)
- Part of update, integration of BP, cholesterol and obesity guidelines previously researched, disseminated through NHLBI

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15 Dietary Approaches Associated with Weight Loss by Expert Panel\(^1\)

Among 15, range of options:*

- Higher protein (25%), fat (30%), carbohydrate (45%)
- Lacto-ovo-vegetarian-style
- Low-fat (10% to 25% of total calories from fat) vegan-style
- Low-carbohydrate (initially <20 g/day carbohydrate)
- Mediterranean-style diet with prescribed energy restriction
- Provision of high-glycemic load or low-glycemic load meals

*If reduction in dietary energy intake is achieved.

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Weight Management or Do Nothing?

Average American adult gains 1 to 2 pounds per year.\(^1\) If a person at the end of 2, 5 or 10 years (eg DPPOS, Look AHEAD) is at a lower body weight than they were at when they began their weight loss efforts, have they avoided gaining those 1 to 2 pounds per year and the health consequences? Gained potential health benefits?

From: Martin, C: WMDPG Symposium, April 2013
BG-Lowering Meds: New Choices Can Support Wt Loss

• Start BG lowering meds (for most) at dx of T2 (e.g., metformin)
• Goal: treat insulin resistance¹,²
  – Choose meds to support wt loss/wt neutral vs. those can cause wt gain, stimulate hunger, cause hypo/eat
• Reframe PWD-T2 mindset on meds
  – Not “diet failure,” it's beta cell failure
  – Meds work concert to treat progression of disease, newer ones can prevent wt gain, assist w/ wt loss

National Weight Control Registry (NWCR) - 10 years

- History: Initiated 1993, Wing and Hill
- Goal: ID successful wt loss maintainers and describe strategies to achieve
- Criteria: ≥ 30lbs maintained ≥ 1 yr; now > 10,000
- 10 yr study: enrolled 1993 – 2000
- Total: 2886 completed ≥ 2 of 10 annual f/u surveys
- Wt loss:
  - Initial: 31.3 kg, keeping off 6.2 yrs
  - 5 yr: 23.8 kg/77% of wt loss
  - 10 yr: 23.1 kg/74% of wt loss


NWCR - 10 years
Predictors of Success

- Magnitude of initial wt loss and duration
- Increased physical activity
- Low calorie and low fat intake
- High restraint and low disinhibition around food
- Self-weighing > several times/wk

“Continued adherence to each behavior can improve long term outcomes.”


Weight Loss: Successful Strategies

- Ready, willing and able?1,2
- Focus, don’t overwhelm1,2
- Choose behaviors most ready to change1,2
- Reduce total fat to < 30% fat (don’t focus on carb)1,3
- Use of meal replacements/structure3
- Include physical activity2,5
- Early success (wt loss) predicts later success (frequent contact early)1,2

Weight Maintenance: Successful Strategies

- Physiologic realities:
  - Lower calorie needs to maintain lower weight: 300 – 400/day

- Food/Calories:
  - Low calorie, low fat intake
  - Eat breakfast
  - Simplify eating plan, minimize choices

- Physical Activity:
  - Regular significant physical activity (60-90 min/day)
  - Minimize sedentary behavior, e.g., TV watching

- Maintain continuous support
- Relapse prevention plan
- Regular self weigh-ins

2. Fletcher, On the Cutting Edge, Diabetes Care and Education. 2008;29(4).

Panel Discussion

Recap Panel Discussion

Two questions for you:
1. What were the most important points you heard today?
2. What is one change you will make in your work with your overweight/at risk clients based on what you heard today?
Themes - Success Stories PreD, T2D

• Light bulb moments:
  – Hitting certain high weight
  – Seeing photo of self/looking unhealthy
  – Observing health consequences, dx preD, T2D


Themes - Success Stories PreD, T2D

• Kick start into action/tools:
  – Program/facility for assistance
  – Accountability to self, group members
  – Using food scale
  – Decrease restaurant eating, time spent in kitchen
  – Less regular soda, use diet beverages, water, etc.
  – Make exercise regular part of life, vary it

• Challenges: Life’s hurdles!


Themes - Success Stories PreD, T2D

• Words of wisdom:
  – “Don’t beat yourself up if you ‘mess up’, get right back on track.”
  – “Be willing to take the first step, experience success, then another.”
  – “Just jump in, do something positive for yourself.”
  – “Believe food that’s healthy for you can taste good too.”
  – “Discover what motivates you long term.”

In Summary

Arya Sharma, MD, Keynote: AADE 2013:

• Obesity/overweight a chronic, progressive condition
• Early, aggressive management is critical
• It's not a treat it, you're done condition
• Our goal should NOT be to help people get thinner, but to help people get healthier. Take the attention off of weight.
• “I only care about the weight you can keep off.”

B.J. Fogg, PhD, Keynote: AADE 2013:

• Fogg equation: BC (behavior change) = M (motivation) + A (ability to make the change) + T (the trigger).
  – Tie new behavior to existing, easier to accomplish
• Build “success momentum” - make one tiny habit change after another
• Can’t break bad habits thinking if you break it once, it will be fixed. We can, overtime, “untangle” bad habits
• Behavior change mastery occurs due to continual practice. Eventually “healthy reflexes” emerge
• “Help people change what they already want to change, not what they know they should change but don’t really want to.”

Reads and Resources

• The conscienhealth blog: http://conscienhealth.org/. Daily blog capturing latest obesity research and puts in perspective with links to research.
• David Allison/UAB weekly recap+e-mail Obesity & Energetic Offerings. Recap of latest publications/articles on hot obesity topics. Link to subscribe: http://www.obesityandenergetics.org/subscribe
• David Katz, MD: (regular blogs)
• diatribe: monthly e-newsletter from Close Concerns: subscribe at diatribe.us
Thank You!!!

![Image of a skier]